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ERADICATING SHEEP SCABIES

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U.S. DEPARTMENT OF AGRICULTURE

ERADICATING SHEEP SCABIES

Sheep scabies, sometimes called scab or mange, is a contagious skin disease. It is caused by tiny mites that pierce the skin of sheep to feed. Infected sheep rub, bite, and scratch themselves to relieve intense itching, and they lose wool from the affected areas. Untreated sheep may die after prolonged infection.

Scabies can be eradicated by dipping infected and exposed sheep in chemicals that kill the mites. State-Federal cooperative eradication programs require the dipping of all scabby sheep. These programs have eliminated the disease from large sections of the western United States.

State governments and the U.S. Department of Agriculture are cooperating to complete the eradication of scabies, and—at the same time—prevent outbreaks in areas that are free of the disease.

Common Scab Mite

The tiny, whitish parasite that causes sheep scabies is called the common scab mite, or psoroptic mite. It develops from egg to egg-laying adult in 10 to 12 days. The mite spends its entire life of 3 to 6 weeks on the animal.

A mature mite is barely visible to the unaided eye. When placed on a dark background and magnified under a hand lens, the mite may be readily seen. It has a whitish oval-shaped body, tapering brownish mouth parts, and 8 brown legs.

To feed, mites pierce the sheep's skin. Scabs, which give the disease its name, form on these wounds.

Spread

All sheep are susceptible to scabies.

Mites spread from scabby to clean sheep by direct contact. The disease may be spread through contaminated quarters by infested wool and infested scabs.

Ordinarily, scabies does not spread from sheep to other animals.

Sheep do not develop immunity to scabies. Animals that have been freed of the disease usually become reinfected when they again come in contact with mites. The disease is not hereditary, but a newborn lamb may become infected from a diseased ewe.

Development

Mites usually begin their attack on the sheep's back or sides, although they may infect any part of the body.

Scab mites may be found and scabs may develop at any time of year. The disease is more readily apparent in winter, when the mites are most active. Mites are much harder to find in summer, because they are less active, cause less irritation, and produce fewer lesions. Mites may remain in the fleece



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**Common scab, or psoroptic, mite; adult female
(greatly enlarged).**

or on the skin; they also may lodge in the sheep's ears, the fold under the eyes, and in wrinkles. Scabs may heal in warm weather, and the sheep temporarily appears "cured." If the infestation is not found and treated during the summer, scabs will appear with the return of cool weather.

Serum oozes from mite wounds and hardens into gray scabs. As mites continually move to healthy skin to feed, scabs gradually enlarge.

An infected sheep becomes restless. It scratches, kicks, or frantically nibbles at its wool and rubs against fixed objects or other sheep. Tufts of loosened, yellowed or broken wool drop off.

Affected sheep often lose weight and condition. After prolonged infestation, a sheep may become so weak and emaciated that it goes down and dies.

Some animals may harbor mites without developing typical signs of the disease.

Signs of Scabies

Loss of wool is a common sign of scabies. Affected sheep may show other signs of the disease, including—

- Frantic scratching and rubbing.
- Yellowed patches of broken or roughened wool.
- Areas of uniformly thick, gray skin and scabs.



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Early lesions of scabies.

- Tags of wool between the sheep's teeth or in its mouth. Tags also may catch on fences or buildings.
- The scratch reflex. When you scratch or rub a scabby area, an infected sheep turns its head and nibbles.
- Cracking and bleeding of scabs when the thickened, gray skin surfaces are rubbed.

Observing the Flock

It is good practice to carefully observe flocks at regular intervals for signs of scabies. Select a spot on pasture where you can watch the sheep without disturbing them. Look for rubbing, scratching, loose wool, and other indications of scabies.

If sheep show any symptoms or if you suspect scabies, examine the animals individually as soon as possible. Isolate affected sheep. Consult your veterinarian or a State or Federal disease-control official promptly to obtain expert inspection, diagnosis, and advice.

Conditions Resembling Scabies

Other diseases, parasites, and special conditions also cause scabs, loss of wool, or rubbing and scratching. These include scrapie, ticks, lice, ec-



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Advanced case showing tags of wool.

zema, wildfire, summer sores, rainrot, shear cuts, sunburn, alkaline allergies, and infected wounds.

In most cases, scabies can be readily distinguished from the conditions that it resembles. Sheep affected with such conditions do not develop the thick, gray scabs that are characteristic of scabies.

Finding the Scab Mite

A thorough examination of suspect sheep for mites should be made by a veterinarian, livestock inspector, or sheepman who is familiar with the parasite and with symptoms of scabies. An inexperienced examiner may overlook mites.

To find mites, the examiner usually scrapes the outer edge of a scabby area with a blunt-edged knife. He then puts the scrapings on a piece of carbon paper in bright sunlight or near artificial heat.

After the scrapings have been exposed to warmth for a few minutes, the examiner looks at them through a hand lens. If mites are present, they will appear under magnification as tiny whitish objects moving over the dark background.

Treatment

Sheep can be freed of scabies by treating them in baths containing an acaricide, or mite-killing chemical. Dipping is the only effective method of treatment for scabby sheep—spraying is not effective because sprays do not penetrate long, thick, or matted fleece.

After sheep are dipped, scabs gradually disappear and new wool grows. Many sheep gain weight and condition rapidly after mites are killed.

Every sheep in the infected or exposed flock should be treated. If a single infected animal escapes dipping, it can reinfect the rest of the flock.

Animals are dipped under supervision of a State or Federal inspector. Scabby sheep may be dipped at farms in portable dipping vats, or at public stockyards and sales barns in permanent vats.



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Scabby area, which will be scraped to find mites.

Time To Dip

Scabby animals should be dipped as soon as possible after the disease is diagnosed. Lambs as well as adult sheep of all ages can be dipped safely.

If dips are properly used, sheep can be treated without injury at any time of year—even when the weather is extremely cold.

Number of Dippings

Federal laws regulate the number of treatments infected sheep must have before they can be moved interstate.

Ordinarily, sheep infected with scabies are dipped twice. The second dipping—given 10 to 14 days after the first—kills newly hatched mites and those that may have survived the first treatment.

Permitted Dips

The U.S. Department of Agriculture has established a list of permitted dips for the treatment of scabies. When properly used, these dips will kill scab mites without injuring the sheep's health, wool, or skin.

You may obtain the names of the permitted dips from your veterinarian, State or Federal disease-control officials, or the Federal veterinarian in charge in your State.

Dipping the Animals

Handle sheep carefully throughout the dipping operation. Sheep may be injured if they are improperly dipped, overcrowded, or roughly handled during dipping.

Examine chutes, pens, and equipment before bringing sheep to the dipping area. Remove nails, broken boards, or other objects that could injure sheep.

Allow sheep to rest and cool off before they enter the vat.

Treat marked lesions by hand before dipping sheep. First, break up hard scabs with fingers or a brush so acaricides can reach the mites. Then, soak affected parts thoroughly with fresh dip before sheep enter the vat, or hand-treat affected areas while sheep are in the vat.

Dip rams, ewes, and lambs separately.

With a dipping fork, submerge each sheep's head in the dip for an instant at least twice.

Water and feed sheep 3 to 6 hours before dipping. Have clean feed and water ready following treatment. Feeding sheep soon after treatment minimizes the chances of harmful effects from dipping.

Cleaning and Disinfection

After sheep are treated, their bed grounds, yards, pens, sheds, corrals, and other premises should be thoroughly cleaned and disinfected.

Remove and burn all litter, manure, bedding, and tags of wool to which mites may cling. Spray all exposed surfaces of buildings with one of the permitted dips or disinfectants.

When contaminated premises and buildings have been cleaned and disinfected, treated sheep may occupy them safely.

Eradication Programs

The cooperative State-Federal eradication programs have proved that scabies can be wiped out. States control the movement of scabby sheep within their borders, and the Federal Government regulates interstate movement.

One of the most effective eradication tools is the treatment of all infected and exposed sheep by dipping. In addition, eradication programs include the following measures:

- Restricting the interstate and intrastate movement of infected sheep, exposed sheep, and sheep from areas in which scabies occurs.
- Inspecting sheep on farms and ranches in areas in which scabies occurs to locate infected flocks, and inspecting sheep in scabies-free areas to make certain that the disease has not been introduced.
- Locating the source of outbreaks by tracing the movements of infected and exposed sheep that have left infected flocks and sheep that were introduced into these flocks before scabies occurred.
- Prompt reporting to State and Federal disease-control officials of all suspected cases of scabies by owners, veterinarians, sheep shearers, and stockyard officials.
- Reinspecting flocks about 60 days after treatment.
- Quarantining infected and exposed flocks until sheep are properly dipped under supervision.

What You Can Do

Observe your flock regularly for scabies symptoms.

If sheep scabies occurs in your flock or in your locality, you can join other sheep owners in forming a local group to get rid of the disease. By sponsoring a properly administered dipping program, your group can provide the means to free all sheep in the locality from scabies. At the same time, you can protect your flocks against new outbreaks through adoption of buying practices that will prevent the introduction of scabby sheep.

Cooperation between your local group and State and Federal disease-control officials can speed the progress of eradication. Local organizations have led many drives for adoption of official cooperative eradication programs. Your local veterinarian, your State veterinarian, or the Federal veterinarian in charge in your State can give you information about scabies eradication programs.

Federal Regulations

Under Federal regulations, States or parts of States are classified as scabies-free, infected, or eradication areas. Eradication areas have adopted



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Flock of sheep with scabies.

official State-Federal programs designed to free flocks from scabies and protect sheep from reintroduction of the disease. Infected areas may become eradication areas by adopting an approved State-Federal scabies eradication program.

Federal laws prohibit the interstate shipping, trailing, driving, or moving of scabby sheep for any purpose. Movement is permitted under the following conditions:

Infected sheep. All sheep in a flock in which scabies occurs are considered infected. Before such sheep can be moved interstate, they must be freed of scabies. Previously infected sheep may be shipped—

- For immediate slaughter, after they have been dipped once under an inspector's supervision and are certified as scabies-free.

- For any other purpose, after they have been dipped twice under an inspector's supervision and are certified as scabies-free.

Exposed sheep. If the flock has been exposed to scabies but shows no signs of disease, sheep may be moved interstate for any purpose after they are dipped once under an inspector's supervision. Under specified conditions, exposed sheep that have been certified as scabies-free may be shipped interstate for immediate slaughter without dipping. The State or Federal inspector who certifies the animals can advise you about such shipments.

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Cover: Treating sheep in portable dipping vat.

PRECAUTIONS

Dips are poisonous. They are safe when used at recommended concentrations under carefully controlled conditions, but may cause serious injury to people and animals when improperly used. Animals that swallow dip may be poisoned.

Use dips only when needed. Follow the directions and heed all precautions on the labels. Handle dip chemicals with care.

Have standard antidotes against poisoning available before dipping operations begin. If anyone swallows the dip, use the antidote as directed on the label. Call a physician at once.

Avoid unnecessary or prolonged soaking of skin or clothing during dipping. If you spill any dip on your skin, wash it off immediately with soap and water. Call a physician if contact is prolonged or if the contaminated area is extensive.

If you spill dip on your clothing, remove contaminated clothing immediately and wash the contaminated skin thoroughly. Launder the clothing before wearing it again.

After handling a dip, do not eat, drink, or smoke until you have washed your hands and face. Wash any exposed skin immediately after working with a dip.

Keep animals away from the vat except when they are being treated.

Do not drain vats into streams or places where livestock and fish or wildlife may come in contact with the discarded chemicals.

Keep dip chemicals in closed, well-labeled containers in a dry place. Store them where they will not contaminate food or feed, and where children and animals cannot reach them.

Do not mix or combine different dip chemicals. Do not put a dip chemical in an empty container which formerly contained a different chemical.

Dispose of empty chemical containers at a sanitary land-fill dump, or crush or bury them at least 18 inches deep in a level, isolated place where they will not contaminate water supplies. If you have trash-collection service, wrap small containers in heavy layers of newspapers and place them in the trash can.

Prepared by

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Agricultural Research Service

Hyattsville, Md.

Issued July 1961

Slightly revised December 1966